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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,057	01/12/2004	John M. Brookfield	D/A3312	1720

7590 10/26/2006

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EXAMINER

FIDLER, SHELBY LEE

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 10/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/756,057

Applicant(s)

BROOKFIELD ET AL.

Examiner

Shelby Fidler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/16/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The abstract of the disclosure is objected to because the first line contains the following error: the phrase "including an array" is written as "includingan array." Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 6488355 B2) in view of Okuda et al. (US 6578954 B2) and Tachihara et al. (US 6280020 B1).

Regarding claim 1:

Nakamura et al. disclose a drop emitting device comprising:

an array of finger manifolds (elements 5; Fig. 2), each finger manifold having longitudinally separated first and second ends (unreferenced ends of elements 5; Fig. 2), wherein the first end comprises a fluid receiving end (col. 7, lines 39-40);

a plurality of drop generators (elements 2 represent drop generators; Fig. 2), each fluidically coupled to one of the finger manifolds (col. 6, lines 64-67).

Nakamura et al. do not expressly disclose a respective vent structure, comprising a plurality of apertures, coupled to each of the finger manifolds for damping pressure perturbations in such finger manifold.

However, Okuda et al. disclose a respective vent structure (air vent hole 40) coupled to the finger manifolds (common ink channel 33) for damping pressure perturbations in such finger manifold (col. 14, lines 50-55), wherein the vent structure is located at the second end of the manifold (Fig. 16).

Nakamura et al. as modified by Okuda et al. do not expressly disclose that the vent structure comprises a plurality of apertures.

However, Tachihara et al. disclose vent structures (elements 13) that comprise a plurality of apertures (auxiliary holes 13; col. 7, lines 40-44).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize a vent structure at the second end of the finger manifolds (Okuda et al.) and to utilize a vent structure that comprises a plurality of apertures (Tachihara et al.), into the invention of Nakamura et al. The motivation for doing so, is to easily remove bubbles from the ink channels (col. 14, lines 50-55 of Okuda et al.) and to shorten the refill time (col. 7, line 65 - col. 8, line 3 of Tachihara et al.).

Regarding claim 5:

Tachihara et al. also disclose that each aperture has a diameter of at most about 60 microns (col. 6, lines 22-23 show that the inscribed diameter of the aperture has a maximum diameter of 54 μ m).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize apertures of at most about 60 microns into the invention of Nakamura et al. as

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modified by Okuda et al. and Tachihara et al. for the purpose of preventing the ink that bulges through the apertures from producing a pressure that will degrade re-fill period (col. 7, lines 2-5).

Regarding claim 6:

Tachihara et al. also disclose that the finger manifolds receive melted solid ink (col. 14, lines 16-24).

Regarding claim 7:

Okuda et al. also disclose that the vent structures are formed in a laminar stack of plates (col. 11, lines 43-48).

Response to Arguments

Applicant's arguments filed 8/24/2006 have been fully considered but they are not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It appears that applicant believes, based on the arguments filed 8/24/06, that Examiner has used the Tachihara et al. (US 6280020 B1) reference to disclose the limitations of a vent structure comprising a plurality of apertures, and a vent structure disposed at an end of each of the finger manifolds. However, this reference was used only to disclose the limitation that the vent structure comprises a plurality of apertures. Examiner used Okuda et al. (US 6578954 B2) to disclose the limitation that the vent structure should be disposed at an end of each of the finger manifolds.

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Please see the above rejection to Nakamura et al. in view of Okuda et al. and Tachihara et al., which discloses a vent structure, comprising a plurality of apertures, located at an end of each of the finger manifolds.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Communication with the USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelby Fidler whose telephone number is (571) 272-8455. The examiner can normally be reached on MWF 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vip Patel can be reached on (571) 272-2458. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shelby Fidler 10/23/06

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